ABSTRACT OF THE DISCLOSURE

A pixel cell array of a light valve does not rely upon photolithography to define inter-pixel spacing. Instead, adjacent pixels of the array are electronically insulated from one another by spacers formed by etching a dielectric layer conforming to sidewalls of a patterned sacrificial layer. Removal of the sacrificial layer, followed by formation of a metal layer over the dielectric spacer structures and chemical-mechanical polishing of the metal layer, completes fabrication of the array. The thickness of the spacer sidewalls, and hence inter-pixel spacing, is determined by the rate of formation of the conforming dielectric layer. This rate can be precisely controlled to produce spacer structures having a thickness of less than the minimum linewidth of a given photolithography system. In this manner, pixel arrays having significantly reduced inter-pixel spacing and correspondingly higher cell densities can be created. Arrays with even greater pixel densities can be created with low-k dielectric materials used to form the dielectric layer and the resulting spacer structures.